SASKATCHEWAN WATER CORPORATION

Managing a Vital Resource

History Of South Sask. River Irrigation Project

Irrigation Services
Operations Division
July 1987

South Saskatchewan River Irrigation Project Development to 1985

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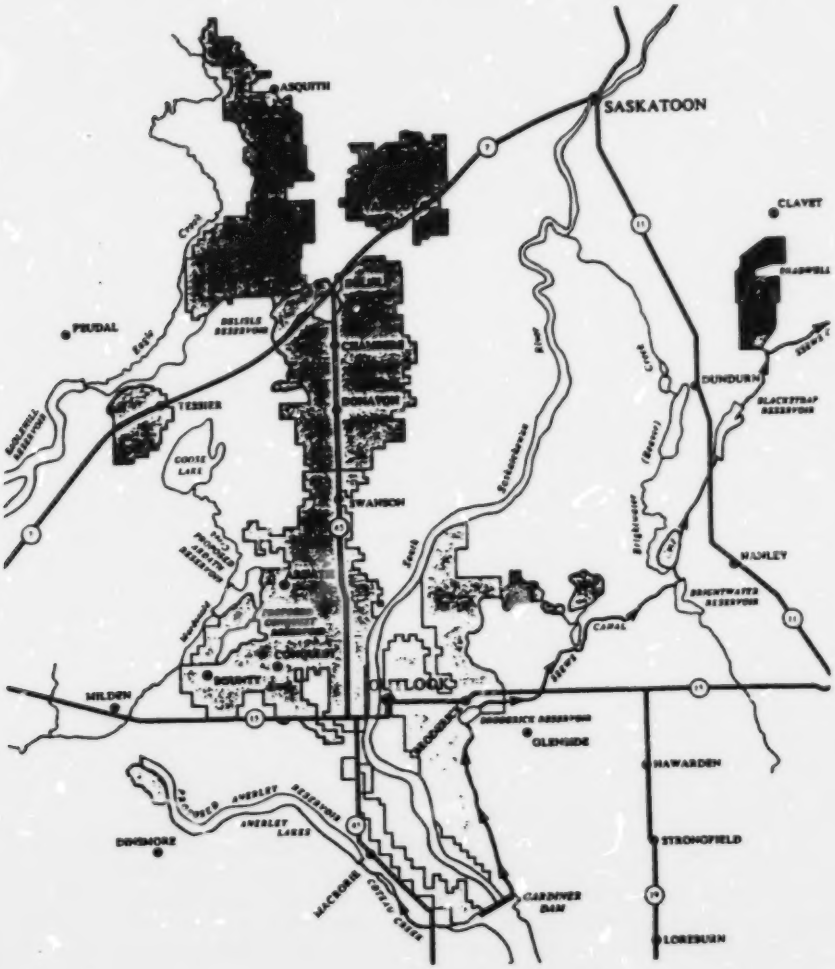
Introduction

This publication is a presentation of both statistical changes in the area serviced by the South Saskatchewan River Irrigation District No. 1 and policy and people happenings.

The most important element of the material shows how the desires of people and government must interact to produce any realistic results and that every project has a life cycle from beginning to maturity.

It is our hope that this publication captures some of the highlights of both people and policy.



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History*

On July 25, 1958, the Government of Canada and of Saskatchewan completed the signing of an agreement to proceed jointly with the multi-use South Saskatchewan River Project. The Province of Saskatchewan was to bear the expense of constructing the irrigation works, with a commitment to have 50,000 acres ready for irrigation by the time the main reservoir was completed, probably in 1966 or 1967. It was envisioned that when the irrigation works were completed they would carry water to some 450,000 acres of irrigable lands stretching from the Qu'Appelle Valley in the south to Saskatoon in the north.

Although there were some immediate expressions of concern from farmers who lived on land which was considered to be irrigable, these appear to have been lost in the optimism of the time. In an effort to make themselves heard, farmers who were skeptical of the benefits of irrigation and were concerned about having to irrigate if it was not economically feasible, set up an Irrigation Investigation Group.

The Saskatchewan Department of Agriculture had done little to no preliminary work prior to the agreement with Ottawa. Most of the responsibility for the design of the irrigation works fell on the Conservation and Development Branch of the Department. During the winter of 1958-59 all existing data was collected and studied. In 1959, field investigations began in earnest. Land classification was conducted jointly with the Drainage Division of the P.F.R.A., the Saskatchewan Soil Survey Division of the University of Saskatchewan and the Saskatchewan Department of Agriculture. Topographic surveys were taken of some 37,000 acres, aerial photos were taken to assist with soil and topographic surveys. Alternative outlets for the supply canals were studied also. Information on dryland farms in the irrigable area was obtained from some 1,400 farm operators, various studies were started into irrigation farm budgeting and policies required by the Department to handle the projected development. A 250-acre irrigation project was set up at the University in Saskatoon for experimental and demonstration work. This would add to the information already being obtained from the Pre-Development Farm.

During the initial investigations into the construction of a dam on the South Saskatchewan River it was thought advisable to develop information on irrigation practices, for those farmers who would be converting to irrigated farms when water was available. As a result, in 1949, the Canada Department of Agriculture established the Pre-Development Farm on land donated by the Town of Outlook.

The South Saskatchewan River Development Commission Act was passed in April, 1959. This Act provided for the forming of a Commission to advise the government in all aspects of the development and operation of the project, and to co-ordinate and approve the planning and research for the development of the project. Mr. C. D. Stewart was chairman of the Commision. Other members of the Commission included T. K. Shoyma, D. Cass-Beggs, T. W. Churchman, W. H. Horner, H. M. (Hugh) Kennedy and Dr. L. E. Kirk.

By the spring of 1961 the alternatives of using gravity outlets in the main dam as a method of delivering water to canals had been abandoned because of design and construction problems, and because of favorable annual cost comparison studies between gravity and pumped canal systems. All water for the South Saskatchewan River Irrigation Project would be pumped.

A complete distribution system was designed for the Outlook-Broderick block and similar work proceeded on the west side. In order to assess development costs, detailed farm layouts were completed on excess of a thousand quarter sections. All design and acreage estimates were done on the basis of gravity irrigation development.

Seven study groups were formed within potentially irrigable areas. Two representatives from each study group were elected to a Central Farm Irrigation Policy Committee. Advance information on irrigation development was provided to this committee and policy alternatives were discussed with them. Unfortunately, most of the farmers who were opposed to irrigation did not take part in the meetings. Polarization of opinion that had occurred during the promotion of the dam, plus a lack of government policy apparently led to a feeling that further discussions were pointless until some decisions were made at the government level.

During the summer of 1961 the fieldwork of the Soil Survey was completed. Engineering design and Economic and Policy studies continued. The Central Committee formed in 1960 from the six farm groups spent a week in Alberta studying firsthand the aspects of irrigation on some of the older established irrigation projects and made recommendations to the Department on farm policies for irrigation development.

The Department appointed Ernest Dehm as Supervisor of the Irrigation Project. With the aid of soil survey reports, contour maps and preliminary designs and the assistance of additional department staff, he was able to provide interested individuals with some ideas of what development on their farm would look like and cost.

During 1962, preliminary engineering, soils and economic studies were nearing completion. As with most other potential irrigation projects, a reduction in acreage of about 50 per cent took place from the more detailed study. Of the original estimated 430,000 acres in the project, excluding the Qu'Appelle Valley area, 200,000 were now considered suitable.

Although the actual date is somewhat in question, it would appear that 1962 was the year members of the

* Previous Publication #81.08

Irrigation Investigation Group posted their land to restrict further surveys. This action was accompanied by a petition from farmers in the Broderick area to the government, banning further surveys. Such actions succeeded in temporarily restricting access; however, legislation was subsequently passed making it illegal for farmers to bar surveyors from their land. Later, during preconstruction surveys, survey crews again left the fields under pressure. When they returned they were escorted, for a time, by police; however, no further confrontation developed.

Three major policy alternatives were considered for implementation of irrigation development. Labelled as the Resettlement, Contingent and Conversion Policies, each had its own advantages and disadvantages.

The Resettlement Policy proposed to develop irrigation very rapidly. All irrigation works would be constructed at the outset, land would be acquired, settled and developed and adequate credit would be made available for all phases of farm development. In this way the benefits from the public investment would be realized as early as possible but there would be many problems, risks and considerable community disruption.

The Contingent Policy was the opposite to the Resettlement Policy in that irrigation would develop at the preference rate of farmers. It proposed to build the main canals and main laterals and extend laterals and surface drains to areas as irrigation was requested. The example and success of the first irrigators would induce others to follow suit. Although a policy of this nature was expected to be acceptable to farmers, there was no assurance that the works would be used, or to what extent they would be used.

The Conversion Policy was developed by the Central Farm Irrigation Committee. This policy proposed that, following a majority vote, each farmer would be obligated to pay the water rate on an increasing acreage until 80 acres was subject to the water rate in seven years. If existing farmers sold their land, the water rate would be levied in accordance with a schedule on all of the irrigable land. It was felt that although the benefits from irrigation would be slow in accruing, existing farmers would be able to supplement and stabilize their present dry farm income and after some years the Province would be assured that all the land would be subject to the water rate.

With most preliminary surveys completed by 1963, policy options and economic studies received greater emphasis by the Department.

In July, 1964, the newly elected government announced its commitment to developing irrigation rapidly. Farmers who had previously argued that irrigation was uneconomic, now charged that the government policy, with its lack of alternatives, was a denial of their basic civil rights. To begin preparation for construction, G. E. Crippen and Associates of Vancouver were authorized to complete working drawings and contract documents for construction of the pump plant sub-structure with completion scheduled for June of 1966. Extension work on irrigation methods, crops, etc. which had decreased as farmer interest swung to policy problems, was revived again in the winter of 1964-65.

The Conservation and Development Branch established a permanent office in Outlook early in 1965. Engineering staff, under the direction of project engineer, Dave Mortin, obtained information for the design of some 150 miles of distribution and drainage works and for the construction in 1966 of 14 miles of main canal and the Broderick Reservoir.

Work progressed on the pumpsite and on aggregate processing for concrete work throughout the project. Extension work proceeded on a fulltime basis as did the work of the Lands Branch with the purchase of over 16,000 acres of land on both sides of the river.

The South Saskatchewan River Irrigation Act was passed in 1966 to provide the legislative framework for the construction, development and operation of the project. Since the Act provided the government power to pursue a policy of rapid development, the Irrigation Investigation Group felt that additional support was required for their cause and turned to the Saskatchewan Farmers Union for help. During this time construction proceeded on the pump plant, main canal and the Broderick Reservoir embankments. As well, a materials yard and construction office were erected in Outlook.

In July, details of the financial assistance for land development were announced. A reducing scale of grants, amounting to one-third of the development cost, to a maximum of $35, or interest free loans were available. Included was a system for implementing the operation and maintenance tax, starting the year water was available. The projected operating cost of $4.50 per acre would be transferred from the Department to the landowner on an additional ten per cent of the irrigable acreage each year. Right-of-way and land purchase continued. As well, a lease purchase policy for allocation of crown land for irrigation development was announced.

The first allocations were made, allowing for the establishment of three new farm units and additions to existing units.

Seven farmers took advantage of the incentive policy to level 309 acres in 1966, a year before water was available to them. Department levelling equipment and the services of one private contractor, Elif Anderson, were used. These individuals were: Arnold Carlson, Edgar Carlson, Art Hauberg, John P. Hauberg, Stan Hauberg, Einar Larson and John Rendall. These individuals and others interested in developing participated in numerous meetings with Department staff to discuss methods of irrigation and financial assistance that would be available to farmers for the adjustment period. Department staff involved at this early stage or shortly thereafter, and their field of expertise, included Vern Davies, irrigation extension; Sandy Hutcheons, economics; Dave Mortin, engineer-in-charge of construction of project works; Duane Climenhaga, en-

gineer-in-charge of land development and his numerous support staff including Byran Ireland, Jim Brown, Phil Lucyshyn, Con Hammer and Ron Paget. Also to become well known in the area for their work in land and right-of-way acquisition were Lorne Barber, John Lasuita, Lee Gaten and, for shorter periods of time, Rendall (Holly) Hollingsworth and Maurice Nowoselski.

In 1967, development continued to expand to include new farms and a start on development of the South Saskatchewan Irrigated Forage Farm. Despite the fact that there were three private contractors active in land levelling, namely Anderson, Rosedale and P & N Construction, the demand outstripped the supply and there were farmers who indicated interest in levelling during the year who were unable to get contractors to do the work.

The costs of development must have seemed high to these original developers at the time; however, if prices for earthwork of approximately 20 cents per cubic yard (no metrics yet) are compared to the 1980 prices of about 60 cents per cubic yard, the advantages are obvious. In 1967, as well, the first side roll sprinkler systems appeared on the project on the farms of Mac Bennett, Edgar Carlson and Hjalmar Niska.

In May of 1967, a delegation of farmers from the district met with the Premier and presented him with a brief which outlined their continued concern that government policy did not reflect adequate consideration and appreciation for the practical problems being imposed upon the farmers affected. Among the recommendations was a proposal that a committee of farm and government representatives be established to discuss problems arising within the framework of government policies. In response to this the government established the South Saskatchewan River Irrigation Project Advisory Committee in July of 1967.

The appointed committee was chaired by Jake Brown of the Economics Department. Other members to serve on this committee were Mr. Frank Dietz, Mr. A. D. (Sandy) Hutcheon, Mr. Arlo Larson and Mr. Frank Tyler. A report and recommendations were submitted in December of 1968.

On the morning of July 7, 1967, just two weeks prior to the official dedication of the dam, pumping began from Lake Diefenbaker into the main canal leading to the Broderick Reservoir. By late afternoon the first water reached the Broderick Reservoir. Most of the water pumped until shutdown on November 15th of that year went to supply the Saskatoon South East Water Supply (S.S.E.W.S.) which is fed by a canal from the east side of the Broderick Reservoir. Gerald Stone, who had become familiar with the pump plant during its construction, assumed responsibility for operating the pump plant and main canal for the District.

The first trial run of the newly developed farm irrigation systems took place on the farm of Arnold Carlson on a cold October 24, 1967, with water diverted from the main canal. Subsequent demonstrations were held later that fall on the Edgar Carlson farm and again later on the Arnold Carlson farm.

George Hart was named first Project Manager of the South Saskatchewan River Irrigation District No. 1 in 1967, a position he held until leaving the Department in 1973. To George and the five-member board fell the task of guiding the District through its formation years. Subsequent project managers were Duane Climenhaga in 1973 and 1974 and Larry Murray who held the position until it was abolished with the formation of the Outlook Irrigation Branch in 1977-78.

Construction of the distribution and drainage works in the Outlook-Broderick area continued by way of private contractors. The last of the major contracts was awarded in 1969 and was virtually completed by the fall of 1970, making water available to all parts of the project area. Total cost of contracts awarded for supply of materials and construction of pumping facilities and the distribution and drainage works was in excess of nine million dollars. Although it had been anticipated that year one, for purposes of the operation and maintenance tax, would start when water was available to a block of land, lack of adequate returns for farmers and other social pressures resulted in delay in the declaration of year one.

With completion of the major works on the east side, construction started on the west side in 1971 to serve a large block of irrigable land in the Conquest-Ardath vicinity, with potential expansion to Donavon and Delisle. Work during 1971 and 1972 progressed on the sub-structure of the main pump house at Diefenbaker Lake, the main canal to Conquest Reservoir and one of the two embankments of the Conquest Reservoir.

Back on the east side, as new canals were completed in the late sixties, the actual acreage irrigated and the number of irrigators increased with each passing year. Approximately half of the irrigable land was purchased by the Lands Branch and reallocated under the lease purchase option to new farmers, or to existing farmers to allow them to increase their acreage. Families who moved in from the surrounding vicinity, from other areas of the province, and from the irrigated areas of Alberta joined resident farmers in the new venture of irrigation farming. Some local businessmen also left their previous fields of endeavour to try irrigation farming.

A. A. Kroeker & Sons, a family corporation based in Manitoba, also took out land and, aided by their experience in the vegetable industry, were the first in the area to diversify into the fresh vegetable market. They subsequently sold their Outlook enterprise to local entrepreneurs, thus ending some local concerns about the introduction of large corporate farms in the area.

A local group of irrigators also decided to diversify their production to include potatoes in 1970. With involvement from the Department of Agriculture, a storage, grading packaging facility was built in Outlook, planting and harvesting equipment was provided, and the group was expanded to include other interested growers in a co-operative venture known as the Outlook Vegetable Producers. Various factors contributed to the eventual disintegration of this group of producers and less than optimum use of the facility. In 1979, the facility was purchased by Prairie Produce Ltd., rekindling hopes for

a viable vegetable industry in the area.

The late 60's and early 70's were a period of excess grain production and low quotas in the Prairie Provinces. Marketing problems that were severe for any grain farmer, were especially severe for irrigation farmers with their added production of Canadian Wheat Board quota crops and few viable alternatives for diversification.One of the first new crops to be introduced was soft white spring wheat, similar in most aspects of production to hard wheat, except for its need for adequate moisture to maintain low protein content.

Several crops were tried with varying degrees of success and have failed to form a consistent or large portion of irrigated acreage. These include mustard, buckwheat, canary seed, peas, lentils and alfalfa seed production. Others that appear more consistently in the rotation are rapeseed, flax, hard wheat, barley, corn for silage and fababeans since their introduction in 1972. Pinto beans, triticale and assorted vegetables are examples of more recent additions to the field of irrigated crops.

Alfalfa, with its high seasonal moisture requirement, and its desirability in the rotation, usually forms a significant portion of the production of any irrigation district and the S.S.R.I.D has been no exception with acreage in the later years of the seventies averaging 5,500. As previously mentioned, the Saskatchewan Department of Agriculture began developing land for a forage reserve project as early as 1968 to provide a reserve to help meet fodder needs in years of general shortages. The acreages under this project increased to 2,500 acres by 1972. A total of 44 fodder shelters were constructed by the Department for storage of this fodder and became a familiar sight in the area south of Broderick. In 1972 a portable cuber was contracted and a portion of the hay from the forage project was cubed and tested in the dairy market. The last of the baled hay from the reserve was also sold.

In January of 1973 the decision was made by the government to defer construction of the irrigation works on the west side of the river for an indefinite period. Works already constructed were to be placed in a condition of minimal maintenance for preservation. Irrigators on the east side of the river who had hoped for better times to come with expanded acreage and the hopes of processing plants felt that they had been sold down the river.

In a letter to householders in the area, the Minister of Agriculture outlined the government concerns that led to the decision and further action to be expected. It was pointed out that the government had spent 18 million dollars in developing the east side to serve 40,000 acres; and the farmers another $60 to $100 per acre for land developed. With only 17,000 acres developed, that left 23,000 acres still to be developed and the government would be concentrating on establishing new irrigation farms on that area.

One of the major problems facing farmers on the east side was that of finding markets for their products, and finding crops that can be grown profitably. The government believed that a priority must be placed on developing markets for irrigation products and securing processing facilities. Government investments to bring specialized production with a margin of profitability to the area were anticipated. The acreage now capable of being irrigated was more than adequate to meet the limited market for special crops.

In summary, further development of irrigation on the west side would have to be tied into future development of processing facilities. In the interim, the Government of Saskatchewan intended to place the emphasis on developing units which were already under irrigation into prosperous and viable operations, and to bring new farmers into the already developed area.

Although the curtailment of construction and the need to seek employment elsewhere caused disruption in the lives of many of the Department personnel involved, thanks to budgetary provisions made to keep staff on during a phasing-out program, and other efforts made to assist in finding employment, few of the employees suffered severe financial loss as a result of the deferment.

Government incentives to assist irrigators on the east side included special credit programs for land development, livestock expansion and the production of special crops. Implementation of the operation and maintenance tax was further delayed and costs continued to be absorbed by the Department; grants for land development also remained at a full rate since year one was not declared. A special grant of $10.00 per acre was paid for acreage actually irrigated in 1971 and 1972 to help ease the financial straits in which the irrigators found themselves.

An adjustment was also made in the leases held under lease purchase agreements. All costs incurred in the purchase of the land by the Department were to have been recovered in the sale of the land. However, the purchase price compensated dryland farmers for disruption through such factors as an "irrigation bonus" and over-valuation of buildings. With the recognition that the irrigation farmers should not have to pay for the disruption, the special adjustment provided for a reduction in the sale price of the land. As the rental charged was a percentage of the sale price, a rental reduction also resulted.

From the pilot alfalfa cubing done by the Department, indications were favorable for a considerable market for alfalfa cubes. As a result, Alfa Cubers Mutual Limited, a co-operative consisting of 20 to 25 farmers, was formed and by the end of the fiscal year an alfalfa cubing plant at an estimated cost of $650,000, which includes the cost of field machinery, was under construction.

To help provide the acreage base, the Department committed all of the suitable production from the fodder bank land to the cubing plant in the following ways: all gravity irrigated land was rented for a ten-year period to irrigation farmers; and the hay from the sprinkler irrigated land was committed to the alfalfa cubing plant. The sprinkler land was also leased to private individuals in later years and the hay shelters were sold.

Land on the west side that had been purchased by the Department was allocated as 10-year dryland leases with a provision for cancellation if irrigation development proceeded prior to that time. Contracts already let were completed and only a minimum of maintenance has been required since.

Effective April 1, 1976, the Board of Trustees of the District assumed responsibility from the Department of Agriculture for the administration, operation and maintenance of the South Saskatchewan River Irrigation District No. 1. The Board consisted of two farmer members, two appointed representatives and a chairman.

Year one was declared and the operation maintenance tax assessed in 1976 in the South Saskatchewan River Irrigation District No. 1 (Outlook-Broderick area). This rekindled the concerns of the dryland farmers at being forced to irrigate by paying a water tax which they neither asked for nor had an opportunity to vote on. On October 17, 1977, the Minister of Agriculture, Hon. Edgar Kaeding, recognized these concerns and indicated that present day dryland farmers would not have to pay a water tax.

These taxes would be paid by the government, on their behalf, to the S.S.R.I.D. #1. In addition, as an incentive to drylanders and young farmers to irrigate, development grants of one-third of total costs to a maximum of $100 per acre on up to 320 acres per farmer would be provided. New financial incentives to assist producers in experimenting with new crops, a system of crop insurance applicable to irrigation, and new incentives for locally owned processing plants were announced, as well.

In 1978 an agreement was reached, effective April 1, 1976, which outlined the conditions and requirements under which the operation and maintenance responsibilities for the project were transferred from the Saskatchewan Department of Agriculture to the Board of Trustees of the South Saskatchewan River Irrigation District No. 1.

The agreement provided for the Department to retain the operation, maintenance and replacement responsibilities for the east side pump plant, main canal (M1) and related structures and the Broderick Reservoir and the Saskatoon South-east Water Supply Canal. The energy costs involved in pumping water for the project became the responsibility of the District. The energy costs for pumping water to meet other water users' requirements, such as the Saskatchewan Water Supply Board, became the responsibility of the Department with these costs subsequently recovered through agreements with these users.

To ensure that these new programs were properly co-ordinated and implemented, and to ensure that farmers in this area have access to senior Departmental staff with authority to solve problems, a new branch, called the Outlook Irrigation Branch, with headquarters in Outlook, was formed with the addition of some new staff and the transfer of other staff already in Outlook in other branches. Mr. R. C. (Bob) Lockwood was the first director of the new branch from October 17, 1978 to March 31, 1979. Mr. Lockwood left the department to assume a full-time career as an irrigation farmer. Mr. Harvey Fjeld replaced Mr. Lockwood as director on April 1, 1979.

In 1980 a new system for water rate assessment was implemented. The new water rate charges were based on the "developed acreage" rather than the old method of assessment on "irrigable acreage". To make up the revenue loss in the change-over process, the Department agreed to pay an "Undeveloped Acreage Grant" which was the difference between the developed acreage and 42,000 acres which had been determined as the minimum viable base. The grant for 1980 was in affect on 9,801.9 acres, made up the base acreage of 42,000.00.

By 1980 the Board of Trustees consisted of four farmer members (two elected and two appointed) along with the Board Chairman, who was an appointed Department member. This Board was active in negotiating several new agreements with the Department of Agriculture.

The Saskatchewan Department of Agriculture also agreed to pay one-half of the farmer's portion of electrical charges at the East Side Pump Plant and to contribute $20,000 per year (commencing in 1981) towards the District's Capital Replacement Fund. The latter two items were to remain in effect until December 31, 1984.

In 1982 the District Board was instrumental in the establishment of a committee, in co-operation with various government agencies, to deal with seepage problems. An agreement was also reached by which Saskatchewan Agriculture would pay 86% of specific projects to install canal linings.

In November, 1982, District elections marked the final phase in making the District totally autonomous starting January 1, 1983. The District Board consisted of five elected farmer members.

On January 1, 1983, a wholly farmer Board of Trustees began operation of the SSRID #1.

The Board for January 1, 1983 to December 31, 1985 was as follows:

Arlo Stranden, chairperson
Roger Pederson, vice-chairperson
Merle Larson
Robert Lockwood
Roy Vestre
District Manager: Conrad O. Hammer

On January 1, 1983, with the conversion of the SSRID #1 to a wholly farmer operation the department began upgrading its operation to deliver a program to all of Saskatchewan, from its Outlook headquarters.

From January 1, 1983, to December 1, 1985, the Department made several positive changes and specific accomplishments are listed for that period.

Specific Accomplishments of the Irrigation Branch of Saskatchewan Agriculture

January 1, 1983

The South Saskatchewan River Irrigation District No. 1 began a totally farmer operated and controlled irrigation district. This was the end of the ten-year phase in period.

April 1, 1984

The Irrigation Branch assumed responsibility for the on-farm irrigation development programs.

Staff were transferred from Regina to our Outlook location.

The branch's new role related to soil and water certification for new irrigation projects. The process has been streamlined and provides improved information directly to the irrigation client, as well as his engineering firm and water administrators in the Saskatchewan Water Corporation.

May, 1984

The one hundred dollar per acre irrigation development grant was announced and this program is managed by the branch.

Program statistics are attached to this report.

January, 1985

The Minister s Advisory Council on Irrigation became operational and has allowed for great improvement in producer input into irrigation programs and policy development.

This six-member council represents all major irrigation areas of the province.

May, 1985

Client services were improved by the following:

1. development of an improved educational and agronomic development pattern;
2. improved newsletter and irrigation manual;
3. new office accommodations to better handle individual discussions and counselling;
4. improved computer assisted information system to track the progress of irrigation projects; and
5. the contracting out of services where staff time was the limiting factor to responsive service.

August 1, 1985

An irrigation data project was undertaken by the branch, the Saskatchewan Water Corporation and the Saskatchewan Association of Rural Municipalities, to provide improved data on a rural municipality, year and development type basis.

September, 1985

The Saskatchewan Irrigation Development Centre was being planned as a joint venture between Agriculture Canada, P.F.R.A. and Saskatchewan Agriculture, Irrigation Branch.

The Centre would provide specific irrigation activities to enhance irrigation development and future industrial development.

Note: On July 1, 1987 the Irrigation Branch of Saskatchewan Agriculture was transferred to the Saskatchewan Water Corporation to be known as Irrigation Services of the Operations Division.

Information Contacts

Operation of the S.S.R.I.D. No. 1	General Manager South Saskatchewan River Irrigation District No. 1 400 Saskatchewan Avenue West P.O. Box 699 Outlook, Sask. S0L 2N0 (306) 867-9923
Policy and Program Data	Manager Irrigation Services Operations Division Saskatchewan Water Corporation 420 Saskatchewan Avenue est P.O. Bag 1000 Outlook, Sask. S0L 2N0 (306) 867-9925

Irrigated Land Use By Crop (1968 - 1985)

	1968 Acres	1969 Acres	1970 Acres	1971 Acres	1972 Acres	1973 Acres	1974 Acres	1975 Acres	1976 Acres	1977 Acres	1978 Acres	1979 Acres	1980 Acres	1981 Acres	1982 Acres	1983 Acres	1985 Acres
Water Rate Acres	1920	6380	8840	11795	14400	16075	17240	19830	22770	26175	28300	30690	32199	35855	380324	39324	39638
+Devt in yr & irrigated	**	**	**	**	**	**	**	**	**	**	**	870	811	260	31	283	237
Devt & not irrigated	**	40	350	70	175	100	**	**	**	**	**	1560	2130	500	1370	1152	455
Total Irrigation	**1920**	**6340**	**8490**	**11725**	**14225**	**15975**	**17240**	**19830**	**22770**	**26175**	**28300**	**30000**	**30880**	**35615**	**36685**	**38455**	**39420**
1 **Grass and Legumes**	**500**	**1410**	**2670**	**4655**	**5525**	**6125**	**6585**	**6485**	**6085**	**3100**	**6150**	**6370**	**5540**	**5955**	**6589**	**6772**	**7800**
Forage	500	1375	2280	3600	3985	4360	5030	5385	5365	5600	5500	5660	4890	5295	6208	6541	7670
Pasture	0	0	50	125	255	415	460	595	510	400	450	550	590	600	191	231	130
Seed	0	35	340	930	1285	1350	1095	505	210	100	200	160	60	60	190	---	---
2. **All Cereals**	**1340**	**3845**	**4130**	**4385**	**5960**	**6900**	**7860**	**9705**	**14845**	**15180**	**14400**	**12810**	**16570**	**24290**	**23762**	**26529**	**19683**
2a) Traditional Cereal	**1120**	**3350**	**920**	**2830**	**3300**	**4250**	**5060**	**8275**	**14470**	**13970**	**12300**	**11770**	**13060**	**21285**	**19938**	**20485**	**11291**
Hard Wheat	625	1740	50	470	450	925	1910	3690	8880	6850	6600	8500	8170	13415	13200	16316	6924
Durum	25	---	60	100	75	25	180	80	290	---	250	130	520	1090	814	1013	795
Barley (Feed & Malting)	430	1190	550	1660	2050	1900	1980	3315	4040	5050	4350	2640	3630	5750	5376	2420	3291
Oats	40	330	260	600	625	1250	620	865	910	870	200	380	690	930	354	545	281
Utility Wheat	---	90	---	---	100	150	370	325	350	1200	900	120	30	40	77	60	---
Rye													20	60	117	131	---
2b) Special Cereals	**220**	**495**	**3210**	**1555**	**2660**	**2650**	**2600**	**1430**	**375**	**1210**	**2100**	**1040**	**3500**	**3005**	**3824**	**6044**	**8392**
Triticale	---	---	---	---	---	---	---	---	---	---	1000	---	450	---	---	3	18
Buckwheat	---	80	210	15	---	---	---	---	---	---	1000	---	30	40	80	85	---
Soft Wheat	220	230	2910	1540	2360	2400	2600	1220	200	640	850	850	2560	2330	3165	5200	6434
Corn (Kernel/Silage)	---	10	10	---	300	250	200	210	175	250	250	190	450	635	443	85	133
Winter Wheat	---	---	---	---	---	---	---	---	---	---	---	---	---	---	136	146	386
Canary Seed	---	175	80	---	---	---	---	---	---	320	---	100	170	---	858	---	---
Can Prairie Spring Wh	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	525	1421
Other	---	---	---	---	---	---	---	---	---	---	---	---	10	---	---	---	---
3. **Oilseeds**	**80**	**720**	**710**	**1630**	**1485**	**1550**	**1640**	**2285**	**1030**	**3650**	**4570**	**6090**	**3850**	**3140**	**4755**	**3957**	**10142**
Flax	80	540	320	210	700	700	930	1125	580	1770	1950	3260	2200	2190	2285	947	3926
Rapeseed/Canola	---	180	390	1370	765	650	330	795	300	1050	2270	2200	830	740	1349	2460	4728
Mustard	---	---	---	---	---	200	380	365	150	710	120	---	290	---	74	550	1488
Oil Sunflower	---	---	---	50	20	---	---	---	---	---	---	60	---	---	---	---	---
Confection Sunflower	---	---	---	---	---	---	---	---	---	120	230	470	350	210	189	---	---
Other	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4. **Legume - Pulse**	**---**	**---**	**130**	**45**	**125**	**400**	**150**	**355**	**90**	**660**	**2551**	**4120**	**4230**	**1425**	**767**	**414**	**936**
Lentils	---	---	---	35	---	---	---	---	40	40	50	30	490	500	487	114	666
Peas	---	---	130	10	---	---	---	115	50	220	25	---	80	50	---	---	---
Fababeans	---	---	---	---	125	400	150	240	---	260	2000	3770	3520	585	280	300	270
Field Beans	---	---	---	---	---	---	---	---	---	140	476	320	140	210	---	---	---
Chinese Broadbeans	---	---	---	---	---	---	---	---	---	---	---	---	---	80	---	---	---
5. **Fresh Vegetables**	**---**	**85**	**850**	**1010**	**1070**	**950**	**1005**	**1000**	**720**	**585**	**629**	**610**	**700**	**305**	**812**	**783**	**859**
Potato	---	85	840	1000	980	875	970	955	660	485	550	480	505	600	684	629	662
Major*** (No. of Crops)	---	---	10	10	90	75	35	45	60	100	79	110	160	165	95	126	163
Other (No. of Crops)	---	---	---	---	---	---	---	---	---	---	---	20	35	40	33	28	34
6. **Miscellaneous**	**---**	**280**	**---**	**---**	**60**	**50**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**

. Previous Publication #8666
** Data Unavailable
*** Major fresh vegetables refers to crops of 10 or more acres

Irrigation and Population *

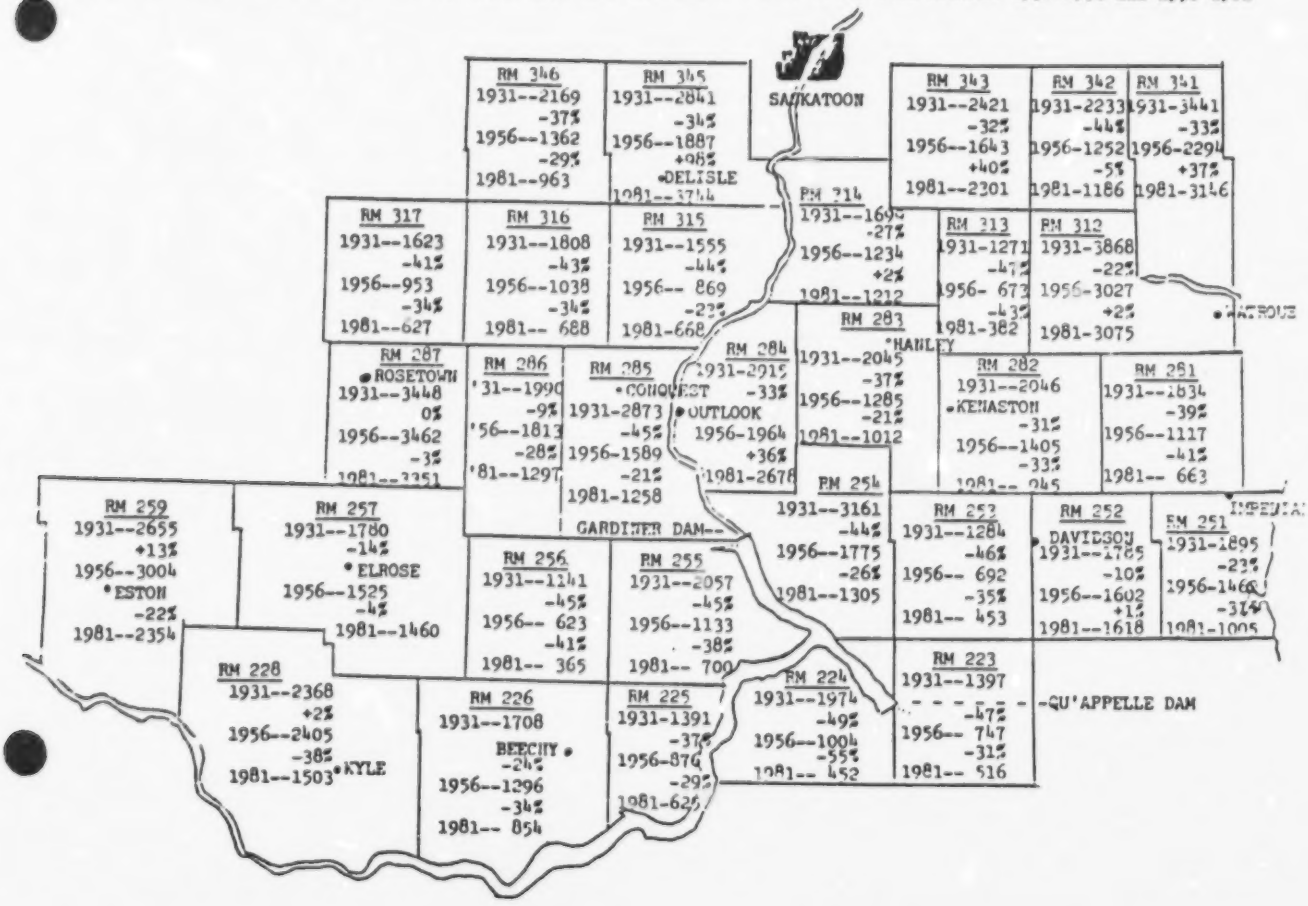
Irrigation results in more employment per acre of production at the farm level. In addition, a greater demand is placed on the supply and service industries. Irrigation also provides added and new opportunities for localized storage and processing activities. All these increased activities in turn ripple through the general population; hence, in areas of extensive irrigation, the effects are evident in the changes of populations. The following area map and table depicts the population effect of irrigation farming in the South Saskatchewan Irrigation District No. 1 (S.S.R.I.D. No. 1) at Outlook. The S.S.R.I.D. No. 1 is primarily located in the westerly half of Rural Municipality of Rudy No. 284.

Construction of the Gardiner Dam began in 1958 and later on the Qu'Appelle Dam and distribution system for the District. These two dams back up the water that forms Lake Diefenbaker, the source of irrigation water for the S.S.R.I.D. No. 1. The construction effect on population is evident from the table. Most centers and rural municipalities surrounding the dam sites have increased population in the 1961 census, peaking for the 1966 census and declining for 1971. This coincides with construction activity which was markedly reduced by 1968 and ceased by 1973.

The first crop year of irrigation began in 1968 with 1,900 acres and is still increasing. In 1982, about 37,000 acres were irrigated. The district water supply would irrigate about 50,000 acres. Water available will, in time, be the limiting factor. The increased population in the area is primarily due to the employment generated on the farm and in the supply and service industries. While some employment has been generated in product processing, the stemming-from increases are in reality, yet to come.

* Previous Publication #82 40

CENSUS POPULATIONS WITHIN RM BOUNDARIES, 1931, 1956 and 1981 and (+ or -) PERCENTAGE CHANGES 1931-1956 and 1956-1981



Populations, Rural and Urban, by Selected RM Areas, 1921 - 1981

	1921	1931	1941	1951	1961	1966	1971	1976	1981
RM # 223	1385	1201	843	612	493	485	423	344	341
Tugaske	230	196	197	186	267	328	196	179	175
Total RM Area	1615	1397	1040	798	760	813	619	523	516
RM # 224	1596	1562	938	664	588	446	323	295	239
Lawson	87	113	117	74	72	98	60	26	20
Riverhurst	330	299	252	218	281	301	264	182	193
Total RM Area	2013	1974	1307	956	941	845	647	503	452
RM #225	698	1100	727	458	441	407	350	320	292
Lucky Lake	112	291	268	344	426	429	378	340	333
Total RM Area	810	1391	995	802	867	836	728	660	625
RM #226	1290	1570	1098	945	917	765	624	555	575
Beechy	----	138	193	227	402	428	342	344	279
Total RM Area	1290	1708	1291	1172	1319	1193	966	899	854
RM #228	1599	2192	1762	1935	1907	1646	1322	1123	987
Kyle	----	176	201	337	535	518	509	499	516
Total RM Area	1599	2368	1963	2272	2442	2164	1831	1622	1503
RM #251	1556	1383	1094	751	672	605	505	441	369
Etters Beach	----	----	----	----	----	----	2	5	----
Imperial	305	340	320	434	557	564	486	456	501
Liberty	161	172	178	152	157	164	141	127	135
Total RM Area	2022	1895	1592	1337	1386	1333	1134	1029	1005
RM #252	1223	1115	901	615	603	549	482	414	392
Girvin	132	110	93	113	143	127	86	80	60
Davidson	652	560	456	670	928	1066	1043	1092	1166
Total RM Area	2007	1785	1450	1398	1674	1742	1611	1586	1618
RM #253	1323	1284	973	745	690	639	548	477	453
Total RM Area	1323	1284	973	745	690	639	548	477	453
RM #254	2406	2323	1446	1078	1466	1638	827	696	569
Elbow	286	294	208	247	401	470	361	286	313
Hawarden	237	258	175	188	268	267	190	133	137
Loreburn	180	189	153	168	302	314	252	224	201
Strongfield	119	97	94	127	218	159	110	101	85
Total RM Area	3228	3161	2076	1808	2655	2848	1740	1440	1305
RM #255	1561	1739	1218	879	900	737	626	588	---
Birsay	46	109	98	126	177	164	123	109	622
Dunblane	161	209	136	139	429	400	57	63	78
Total RM Area	1768	2057	1452	1144	1506	1301	806	760	700
RM #256	773	1141	918	592	590	498	461	418	365
Total RM Area	773	1141	918	592	590	498	461	418	365
RM #257	682	1354	1026	844	854	1161	1025	864	836
Elrose	217	310	253	491	585	619	573	614	624
Hughton	88	116	141	87	86	---	---	---	---
Total RM Area	987	1780	1420	1422	1525	1780	1598	1478	1460
RM #259	1538	1805	1679	1135	1175	1297	1140	1012	903
Eston	318	566	726	1301	1695	1548	1418	1354	1413
Plato	125	154	119	135	178	102	66	48	38
Richlea	83	130	135	115	---	---	---	---	---
Total RM Area	2064	2655	2659	2686	3048	2947	2624	2414	2354
RM #281	1598	1618	1349	891	697	659	590	510	432
Simpson	217	216	206	270	340	307	239	223	231
Total RM Area	1815	1834	1555	1161	1037	966	829	733	663
RM #282	1700	1823	1551	1119	943	848	709	622	600
Kenaston	217	223	239	276	423	466	402	352	345
Total RM Area	1917	2046	1790	1395	1366	1314	1111	974	945
RM #283	1572	1683	1205	881	806	726	607	608	528
Hanley	312	362	380	358	455	461	390	446	484
Total RM Area	1884	2045	1585	1239	1261	1187	997	1054	1012

	1921	1931	1941	1951	1961	1966	1971	1976	1981
RM #284	1919	1940	1415	870	796	686	591	572	516
Broderick	120	118	114	114	141	122	115	135	101
Glenside	165	145	109	106	143	137	94	97	85
Outlook	704	712	505	676	1340	1499	1767	1687	1976
Total RM Area	2908	2915	2143	1766	2420	2444	2567	2491	2678
RM #285	2320	2270	1678	1156	1166	921	798	743	834
Bounty	122	134	104	90	87	81	49	44	35
Conquest	286	286	240	260	295	285	261	265	256
Macrorie	154	183	101	123	182	194	120	100	133
Total RM Area	2882	2873	2123	1629	1730	1461	1228	1152	1258
RM #286	1384	1419	1163	819	760	634	542	512	453
Dinsmore	171	256	215	301	433	510	421	398	398
Milden	151	190	211	314	368	288	239	234	251
Wiseton	75	125	163	224	246	197	181	201	195
Total RM Area	1781	1990	1752	1658	1827	1629	1383	1345	1297
RM #287	1570	1711	1453	1115	941	725	734	666	632
Rosetown	865	1553	1470	1865	2450	2658	2614	2551	2664
Sovereign	142	184	127	171	125	134	91	68	55
Total RM Area	2577	3448	3050	3151	3516	3517	3439	3285	3351
RM #312	1947	2124	1859	1254	966	843	722	629	593
Manitou Beach	----	----	141	127	159	129	----	136	134
Watrous	1101	1303	1138	1228	1461	1459	1541	1520	1830
Young	310	340	340	363	341	395	496	495	456
Zelma	66	101	82	92	81	79	51	51	62
Total RM Area	3424	3868	3560	3064	3008	2905	2810	2831	3075
RM #313	1111	1271	1032	725	580	540	535	463	382
Total RM Area	1111	1271	1032	725	580	540	535	463	382
RM #314	1126	1343	1056	767	656	628	540	598	568
Indian Res.	----	76	82	88	116	114	126	141	113
Dundurn	197	280	344	298	411	373	354	409	531
Total RM Area	1323	1699	1482	1153	1183	1115	1020	1148	1212
RM #315	1542	1434	1022	767	813	724	651	606	668
Laura	92	121	88	98	----	----	----	----	----
Total RM Area	1634	1555	1110	865	813	724	651	606	668
RM #316	1388	1333	999	644	636	546	482	436	392
Harris	258	302	237	247	305	287	254	233	259
Tessier	171	173	132	115	115	70	40	54	37
Total RM Area	1817	1808	1368	1006	1056	903	776	723	688
RM #317	1485	1623	1327	905	891	755	786	642	627
Total RM Area	1485	1623	1327	905	891	755	786	642	627
RM #341	2465	2445	1980	1388	1146	1022	934	767	680
Guernsey	122	150	115	102	79	141	142	222	198
Lanigan	426	384	359	410	516	911	1430	1646	1732
Plunkett	----	120	88	108	136	125	152	139	150
Viscount	315	342	272	338	303	346	395	424	386
Total RM Area	3328	3441	2814	2346	2180	2545	3053	3198	3146
RM #342	1495	1798	1540	905	587	580	512	457	414
Colonsay	183	214	183	228	278	348	526	542	594
Meacham	90	221	148	167	245	194	186	184	178
Total RM Area	1768	2233	1871	1300	1110	1122	1224	1183	1186
RM #343	1791	1953	1672	1178	1159	1263	1031	1047	1287
Allan	197	346	382	332	417	676	712	720	871
Elstow	146	122	126	99	98	114	150	146	143
Total RM Area	2134	2421	2180	1609	1674	2053	1893	1913	2301
RM #345	2046	2089	1684	1057	1014	1064	1144	1376	1959
Delisle	273	364	333	411	508	665	653	783	980
Asquith	311	275	214	255	324	304	355	416	507
Vanscoy	89	113	117	109	136	156	244	276	298
Total RM Area	2719	2841	2348	1832	1982	2189	2396	2851	3744
RM #346	1805	1718	1348	906	759	637	535	530	502
Kinley	92	113	85	118	119	91	74	65	54
Perdue	358	338	295	389	436	455	411	393	407
Total RM Area	2255	2169	1728	1413	1314	1183	1020	988	963

Farms and Acreages by Crop Rotations in the South Saskatchewan River Irrigation District #1, Outlook, 1979*

	Acreage	No. of Farms	Acreage/Farm Average	Acreage/Farm Approx. Range	% of Farms	Irrigation Land
Cereals Only	3,930	20	197	50- 550	24.7	12.4
Cereals & Alfalfa	7,028	22	319	20- 800	27.2	22.2
Cereals-Oilseed-Pulse	9,332	18	518	130-1200	22.2	29.4
Cereals-Oilseed-Pulse & Alfalfa	9,517	19	501	110- 800	23.5	30.0
Potatoes, Oilseed, Cereals & Alfalfa	1,862	1	----	-----	1.2	5.9
Fresh Vegetables Only	25	1	----	-----	1.2	0.0
Totals	**31,694**	**81**			**100.0**	**99.9**

* Previous Publication #83.22

Rate of Development by Year and Irrigation Type 1968 - 1985

(Measured in Acres)

Original Year of Development	Total Area	Wheel-move Systems	Pivot Systems	Linear Systems	Misc. Sprinklers	Surface Irrigation	Other Types
1968	1573.2	203.6	127.5	0.0	0.0	1242.2	0.0
1969	3513.1	286.8	1469.5	0.0	0.0	1756.8	0.0
1970	1792.6	0.0	962.0	0.0	0.0	830.6	0.0
1971	3343.3	132.9	1611.8	0.0	0.0	1472.7	126.0
1972	3016.2	370.6	1027.0	0.0	0.0	1618.7	0.0
1973	1619.4	303.1	483.7	0.0	0.0	832.6	0.0
1974	1456.4	0.0	1456.5	0.0	0.0	0.0	0.0
1975	1607.8	302.6	894.6	0.0	0.0	410.6	0.0
1976	2063.6	383.2	1034.9	0.0	0.0	645.5	0.0
1977	3004.4	579.6	1628.1	0.0	0.0	796.7	0.0
1978	3061.9	315.7	1715.0	0.0	50.2	981.0	0.0
1979	3322.8	298.7	627.0	0.0	375.8	2021.4	0.0
1980	1344.4	585.0	543.5	0.0	78.1	137.9	0.0
1981	3358.4	566.5	2490.5	171.9	0.0	0.0	129.5
1982	1478.6	312.5	943.5	0.0	68.9	63.0	90.7
1983	1630.0	40.0	1323.0	0.0	0.0	0.0	267.1
1984	1151.0	316.0	835.0	0.0	0.0	0.0	0.0
1985	1243.9	151.4	1092.5	0.0	0.0	0.0	0.0
Grand Total	39581.0	5148.2	20265.6	171.9	573.0	12809.7	613.3

Type of Development by Rural Municipality 1968-1985

(Measured in Acres)

R.M. No.	Total Area	Wheel-move Systems	Pivot Systems	Linear Systems	Misc. Sprinklers	Surface Irrigation	Other Types
254	4239.9	578.6	738.2	0.0	0.0	2656.0	267.1
284	35341.1	4569.6	19527.1	171.9	572.9	10153.5	346.1
Grand Total	39581.0	5148.2	20265.3	171.9	572.9	12809.5	613.2

Note: Difference in areas between tables is due to rounding